

Disability eligibility issues and university student assessment outcomes

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Many issues pertaining to identifying and documenting university students with learning disabilities (LD) have been discussed in the professional literature or litigated. This article documents the eligibility procedures and student assessment results of a project for identifying and providing learning strategies services to students with LD at a large midwestern public university. Many legal issues are relevant in the discussion and evaluation of this project, including the use of standardized procedures for establishing disability status. This project used standardized procedures such as eligibility rules and cut-off scores for making eligibility decisions, thus reducing the nagging inconsistencies and subjectivity associated with nonstandardized assessments and clinical judgements about LD. Students found eligible for the project showed academic skill deficits as low as the fourth grade level, with the average skill level being eighth grade. All students seeking services but determined not eligible showed proficient academic skills. Data from a sample of students not seeking project services gave insight to the skills of "typical", skill proficient college students, thus providing an index by which to judge skill deficiency.

Keywords: Post secondary learning disabilities, assessment of adult learning disabilities, legal issues in college and university disability services

1. Introduction

As increasing numbers of students with learning disabilities (LD) attend colleges and universities [23], con-

cerns about eligibility documentation and verification also come to the forefront [7]. This becomes a major issue because making eligibility determinations about disability status are a required first step in providing program accessibility and instructional accommodations. Moreover, as seen at Boston University where these concerns were the basis for a recent legal action [7], eligibility issues loom large in higher education settings [19].

The reasons for the increase in enrollment of students with LD in higher education are largely traceable to federal mandates within Section 504 of the Rehabilitation Act and The Americans with Disabilities Act (ADA), which have been instrumental in securing equal educational opportunities for these students. The Individuals with Disabilities Education Act (IDEA) has also had an impact on the number of students with LD advancing to colleges and universities.

The IDEA requirement for developing individualized transition plans (ITPs) for high school finishers has propelled many students with LD toward post-secondary education. Hasazi et al. [8] investigated the impact of the IDEA transition mandate through in-depth interviews, observations, and document reviews of nine sites including five model sites. Results showed that transition mandates play a critical role in expanding post-secondary school options. The future holds an even greater expansion in university enrollments for students with LD according to Vogel et al. [23], who noted a doubling of the percentage of students with self-reported learning disabilities entering as full-time college freshmen between 1988 and 1994.

Early on, the focus of Section 504 of the Rehabilitation Act of 1973 was providing physical accessibility for students with documented disabilities in institutions of higher education. However, this Act also provided a legal mandate for non-biased university entrance requirements and learning accommodations including instructional and testing modifications for students with disabilities. It is also this law which has been a legal support for students when issues of admissions discrimination surface. However, students seeking disability-

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related services must verify and document their disabilities.

1.1. Documentation and eligibility issues in the post-secondary setting

As seen in *Guckenberger v. Boston University* [7] which is also known as the Boston University case, problems with verification of learning disability take many forms. In that case, the issues revolved around the questions of who is qualified to make disability decisions, how recent a diagnosis must be, what constitutes a reasonable accommodation, and more fundamentally, what characterizes the condition of disability when it come to higher education learning. The latter issue was not actually litigated, but it was a core discussion point in the case.

Although some students enter college with acceptable records verifying disability, many do not and for the first time find themselves seeking verification for (i.e., diagnosis) of their suspected disabilities. In college and university settings, assessing and documenting a student's disability is an evolving responsibility. Many universities have only recently begun to develop diagnostic centers or reconceptualize their disability services in light of current research and litigation outcomes. The task of assessing and verifying disability may even seem unwelcome in some universities because of the perceived resources needed for accomplishing the task. Moreover, personal philosophies about the condition of LD and the purpose of higher education also influence the provision of assessment and accommodation services. For example, some professionals may hold that a college education is for the brighter students in society, with LD being perceived (incorrectly) as a lack of intellect and/or an excuse for avoiding more rigorous courses such as languages or mathematics, as indicated in some of the rhetoric surrounding *Guckenberger v. Boston University* [7]. More specifically, administrators at Boston University referred to the conditions of LD and attention deficit disorder as "fugitive disorders" [5]. Comments were also made to the effect that in-class drowsiness or somnolence (a made-up condition by the university president) might well be documented as a disability requiring the instructor to provide a wake-up accommodation [25]. Having grappled with most of these very issues for decades, other professional venues such as public schools and mental health agencies have developed, through experience and research, an understand-

ing of the condition of LD and methods for identifying and treating students with this disability.

More than a decade prior to the Boston University case, Mellard and Deshler [12] found disparate methods being used for assessing and identifying college students with LD, with some colleges and universities accepting clinical judgments, perhaps based on outmoded or idiosyncratic views of LD, for deciding whether a student had a learning disability. They stressed a need to develop equitable identification procedures reflecting sound conceptual and empirical methods for determining eligibility for LD services. To do so, these researchers argued that higher education institutions should model public school practices for identifying and documenting LD.

Siegel [20] also discussed problems with LD diagnosis in higher education. This researcher noted that one of the contentions in the Boston University case was that many students diagnosed with LD could not even show that their learning abilities were deficient because their documentation did not include standardized measures of achievement. Rather their documentation relied in many instances on clinical judgments. The author went on to stress the importance of using achievement data and setting cut-off scores (to reduce clinical subjectivity) for making decisions about disability designations.

Another concern was the lack of information about the skills of college students in general, which Siegel [20] argued are necessary benchmarks for determining atypical achievement, a requirement for determining disability. Morris and Leuenberger [13] point out the importance of comparison group data for understanding the ramifications of LD. They argued that comparative information about the skill level of typical college students provides an index for judging a skill deficiency. It appears that the majority of comparative research pertaining to students with LD versus non-LD has occurred with youthful learners rather than with adults. This adds to the difficulty in differentiating adult college students with and without LD.

In a recent review of evaluation practices for college students with LD, Ofiesh and McAfee [14] examined how psycho-educational evaluations were used for service delivery decisions. These researchers, referring to *Guckenberger v. Boston University* [7], suggested that procedures must ensure that assessments are valid, structured and systematized, and defensible in light of close scrutiny and litigation. Gregg and Scott [6] also recently reviewed the issues and problems related to defining and documenting LD in the college set-

ting. To enhance the validity of the documentation process, they stressed the need for using both research and theory-based eligibility criteria such as discrepancy-based methods and clinically-based methods. They also referred to the Boston University case, stressing that the documentation of LD must not be burdensome to the student or university, giving as an example the issues of currency of diagnosis and credentialing of personnel

Several conclusions can be drawn from these articles. First, assessments of LD should be valid; that is, tests and criteria should accurately identify the condition of LD as it is currently and commonly defined. Second, the process should be parsimonious in that it should be as minimally cumbersome and burdensome to the student or university as possible. Third, the identification process should be structured; for example, the process should be standardized using accepted practices such as those in public schools. Finally, the assessment and documentation process must be legally defensible. Defensibility would be established, in part, by adhering to researched practices and procedures.

Although our understanding of the legal requirements for educating college students with disabilities is becoming more clear, operationalizing the systems and procedures which relate to these requirements is problematic [20]. The issues are more than just legalistic; they have practical implications. That is, not only are standardized procedures and assessments necessary for making accurate judgments about the skills, abilities, and classification status of students, but the information derived from these assessment adds to our understanding of the challenges these students face and the kind of services that must be provided to ensure fair opportunity for success.

The purpose of this article is to document the eligibility procedures and assessment outcomes of a project for serving university students with LD. Although the project was completed prior to *Guckenberger v. Boston University* [7], issues surrounding that case are discussed as they related to this project. This article describes the project's standardized system for evaluating and documenting LD and includes descriptions of the assessment procedures, eligibility criteria, and decision rules. Also presented are data regarding the psychometric characteristics, that is, academic skills and verbal and nonverbal abilities, of the university students who sought evaluations for their suspected learning problems. Mention is made of the skill levels of students known to have skill deficits as judged by their placement in developmental English and a sample of university students enrolled in an introductory psychology course not recommended for such placement.

2. Project methods

In this section, we present information about the students who participated in the project. The assessment measures used for identifying eligible students, as well as criteria for making eligibility decisions are described. Rationales are given for the various procedures utilized in this project.

2.1. Student participants

Fifty-five matriculated graduate and undergraduate students self-referred for evaluation of their suspected LD. The average age of the participants was 21.5 years with a range of 17 to 40. Twenty-seven students were freshmen, twelve were sophomores, four were juniors, four were seniors, and three were graduate students. Five students did not present class information. Students became aware of the assessment and program services primarily from printed notices that were posted in the student union, student newspaper and the campus student assistance center.

Assessment data were also collected from 23 students enrolled in an Introductory Psychology class and 22 students enrolled in a Developmental English class. All students in Developmental English had been placed in that course based on the evaluations of three English instructors who judged the students to have deficient writing skills. None of the students enrolled in the Introductory Psychology course had been referred to Developmental English. These students were nominally paid volunteers.

2.2. Assessment procedures

Each student was evaluated via diagnostic tests, interviews, and reviews of records. All students completed the evaluation protocol regardless of whether they had been previously assessed and diagnosed with LD. Eligibility decision rules were developed for determining eligibility. The Eligibility Decision Rule Form, as shown in Fig. 1, incorporated these rules and was used as the document for recording and summarizing student data and declaring eligibility.

ELIGIBILITY DECISION RULE FORM		
TIER 1: SCREENING		
(DATE) _____		
_____	STANFORD ACHIEVEMENT TESTS: GRADE LEVEL SCORES	DECISION RULE 1
	READING _____ SPELLING _____ MATH _____	IF, 10.0 AND ABOVE ON ALL 3 TESTS: STOP TESTING! IF BELOW 10.0, ON ANY TEST GO TO WJPEB ACHIEVEMENT BATTERY.
TIER 2: SKILLS ASSESSMENT		
(DATE) _____		
_____	WOODCOCK JOHNSON: GRADE LEVEL SCORES	DECISION RULE 2
	READING _____ WRITING _____ MATH _____	IF 10.0 AND ABOVE ON ALL 3 TESTS: STOP TESTING! IF BELOW 10.0 ON ANY TEST, GO ON TO PPVT-R and RPMT.
TIER 3: VERBAL AND NONVERBAL ABILITIES ASSESSMENT		
(DATE) _____		
_____	PPVT-R: _____	DECISION RULE 3
_____	RPMT: _____	IF 50th%ile AND ABOVE ON BOTH, STOP TESTING. STUDENT IS ELIGIBLE FOR SERVICES.
		IF BELOW 50th%ILE ON BOTH, GO ON TO WAIS-R.
_____	WAIS-R: . VERBAL _____	IF 90 ST. SCORE OR ABOVE ON ANY
PART,	PERFORMANCE _____	STUDENT ELIGIBLE FOR SERVICES.
	FULL SCALE _____	IF BELOW 90 ST. SC, ON EACH, NOT ELIGIBLE.
PROGRAM		
ELIGIBILITY		
_____ IS / IS NOT ELIGIBLE FOR SERVICES ON THE BASIS OF		
THE		
(DATE/BY)	(NAME OF STUDENT)	AVAILABLE ASSESSMENT INFORMATION.

Fig. 1. Eligibility decision rule form.

2.3. The kind of data

Before making an eligibility decision, we wanted to ensure that the kind of data we amassed was, indeed, consonant with the kind of data used in the public school setting which we modeled in our project. Thus, the information we collected was appropriate for determining whether or not an academic skill deficit existed, for indicating the student's general level of ability in verbal and nonverbal domains, and for determining if

the skill deficit was discrepant from verbal and nonverbal abilities. We also collected information that could be used for determining exclusions from eligibility such as low ability, sensory limitations, or social/emotion factors which might be the primary cause of the skill deficit.

2.3.1. The assessment tiers

A three-tier assessment procedure was implemented. Tier 1 assessment included the reading comprehension,

spelling, and math applications subtests of The Stanford Achievement Tests (SAT). This battery was chosen for the first tier of the procedure because it was self-administered and has a positive history as a screening instrument [18].

Tier 2 tests consisted of the Woodcock Johnson Psycho-Educational Battery Achievement Test (WJPEB [26]). The reading comprehension, written expression, and arithmetic subtests were administered. The WJPEB is a well known test, commonly used for making eligibility decisions about LD.

Tier 3 tests consisted of the Peabody Picture Vocabulary Test – Revised [2], which is a test of receptive vocabulary, and the Raven's Progressive Matrices Test (RPMT [15]) which is a test of nonverbal problem solving. Sattler [17] described both as screening instruments for verbal and nonverbal ability, respectively, yet advised that the RPMT should not be used solely as an indicator of IQ because of its loading with a visual perceptual factor. We chose to use these tests in lieu of individualized intelligence tests because they purportedly evaluate important intellectual abilities, yet they do not require licensure as a psychologist to administer. Therefore, learning disability or other diagnostic specialists, for example, may administer these tests. Professional licensure issues were a major point of litigation in the *Guckenberger v. Boston University* case [7] in that the University would only accept disability diagnosis from doctoral-level psychologists or psychiatrists, and only these professionals are licensed to administer certain tests. The Wechsler Adult Intelligence Scale – Revised (WAIS-R [24]) was administered when deemed necessary as indicated by the decision rules.

All students were administered tests from each tier with the results of the final two tiers being used for determining eligibility for services. When each assessment tier was completed and the results were derived, a Decision Rule indicated whether to move to the next assessment tier. To determine the usefulness and validity of the tests and cut-off scores, as much data as possible were collected, thus all students progressed through Tier 1, Tier 2, and Tier 3 assessments regardless of the pass or fail results on Tier 1, the screening test.

2.4. Decision rules and cut-off scores

Decision rules were developed as a means to operationalize the criteria we had adopted for determining eligibility for accommodation and instructional services. Moreover, their use standardized and made constant the method for determining eligibility for ser-

vices. Stanovich [22] and Siegel [20] discussed the practice of and rationale for establishing cut-off scores for making disability decisions, particularly as related to reading disability. One author mentioned that a 15th percentile score is commonly used as a cut-off, and the other researcher mentioned that the 25th percentile is commonly used. Although both researchers recommended the use of cut-off scores based on standardized assessment data, they also discussed the ambiguity of this practice, most notably the problem of using continuous measurement data (e.g., percentile scores) for making disability decisions which are dichotomous by definition. Recognizing this dilemma, we deliberated regarding what cut-offs we would use and could defend. Our rationales are specified forthwith.

2.4.1. Decision 1 / cut-off scores

The first decision was to determine if a student passed or failed the screening tests in Tier 1 and, thus, to decide if the student should progress to the next set of assessments in Tier 2. Decision Rule 1 stated, "If the student scored 10th grade or above on all three tests, stop testing. If the student scores below 10th grade on any test go on to the WJPEB." Passing the screening meant that the student's scores on the Stanford Achievement Tests indicated proficient academic skills. Failing the screening tests led to the administration of the next tier of tests. A fundamental decision was made, a priori, that if a student demonstrated high school level basic academic skills, that is, proficient skills, s/he was not eligible for services as a student with a learning disability because a deficit learning skill was not apparent. Implicitly, we chose not to promote the notion that a student with proficient skills had a learning disability. Initially, the 10th grade level was chosen as a screening cut off score. We found that to decrease the chances of excluding false negatives, a higher grade cut off score would be more appropriate for screening. Because this was a research study, and because we wanted to collect data at each step of assessment, all students progressed to the following tiers of assessment regardless of their screening test results.

2.4.2. Decision 2 / cut-off scores

Decision Rule 2 indicated that if a student scored below a proficient level, that is, the high school level, on any of the three tests of the WJPEB on Tier 2, then s/he showed a skill deficit and would continue on for additional testing of verbal and non verbal abilities via the PPVT-R and the RPMT on Tier 3. Decision Rule 2 stated, "If the student scored above the 10th grade level

on all 3 tests, stop testing. If the student scores below the 10th grade level on any test, go on to the PPVT-R and RPMT.”

2.4.3. Decision 3 / cut-off scores

Decision Rule 3 was addressed at the end of Tier 3 assessments. The Rule stated, “If the student scored at the 50th percentile or above on the PPVT-R or RPMT, stop testing and declare eligibility. If the student scored below the 50th percentile on both go on to the WAIS-R. If the student obtains a standard score of 90 or above on the Full Scale IQ or either the Verbal or Performance scale of the WAIS-R, the student is eligible for services. If the student scored below a standard score of 90 on each scale of the WAIS-R, the student was deemed not eligible for services.”

These tests were administered to obtain an indication of ability level in these cognitive domains. The scores were also used to estimate the existence of a discrepancy between ability and achievement, another common but contested [20] requirement for determining LD. For program eligibility, we sought students who showed normal range ability on the tests. We did not require a statistically significant discrepancy between ability and achievement given the dubious nature and acceptance of IQ assessment, which was referred to as skeptical folklore by Mellard [10] and as fetishism by Stanovich [22]. With average or higher scores in either cognitive area yet lower scores on the academic skills tests, the student demonstrated a simple discrepancy meeting our criteria.

3. Assessment results

Of the 55 students who self referred for assessment for their suspected learning problems, thirty-one (31) were found to be eligible for disability services per the established criteria as indicated on the Eligibility Form. Twenty-two students did not meet the eligibility criteria for services because they showed proficient skills and normal cognitive abilities. Two did not meet the eligibility criteria because they were below the WAIS-R ability criteria. Table 1 shows the assessment results presented in grade level, standard scores, ranges, and/or standard deviations where appropriate.

3.1. Achievement test results of the LD students

On the WJPEB the students found eligible for LD services obtained mean reading scores in the upper eighth grade level (i.e., 8.6 grade level, 23rd percentile). Nineteen of the students demonstrated eighth grade or lower skills. The mean written language score was on the lower eighth grade level, (i.e., 8.1 grade level, 18th percentile). Twenty-two students showed eighth grade or lower written language skills. Mathematics, a relative strength, was near the tenth grade level (i.e., 9.9 mean grade level). Because students were assessed in areas of their suspected learning problem, only six students were administered the arithmetic subtest.

The grade level scores, perhaps, best indicate the level of difficulty for these students in reading textual materials or writing compositions at the college level. This is why grade level scores were used for the purpose of cut-off scores for determining eligibility for the project.

On the Stanford Achievement Test (SAT), the mean grade-level score was 11.03 for reading comprehension, 7.96 for spelling, and 11.23 for arithmetic applications. All students, except one, scored below the 10th grade level on either the reading or spelling test. The trend of students with LD to perform better in arithmetic was observed on both the SAT and WJPEB. The spelling scores were the lowest on both tests and most closely aligned.

3.2. Verbal and non-verbal ability test results of the LD students

The PPVT-R and the RPMT were administered to obtain a measure of the college students' verbal and non-verbal cognitive abilities. The mean standard score on the PPVT-R for the LD group was 94.77, which is in the average range. On the RMPT, the LD group obtained a mean standard score of 112, which is in the high average range. These scores indicate average to high average abilities in these two domains, with nonverbal abilities being somewhat higher than verbal. These findings support two common notions about the condition of LD. The academic deficits that trouble students with LD are not resultant from low cognitive abilities, and LD tends to be more related to lower verbal rather than non-verbal ability.

Table 1
Scores for Project Eligible (LD) and Non-Eligible Students (NLD)

Measures	LD (<i>n</i> = 31)			NLD (<i>n</i> = 22)		
	Means	Range	SD	Means	Range	SD
WJPEB						
Grade						
Read	8.62	4.3–12.19	2.62	12.87	12.4–12.9	0.10
Math	9.86	6.0–12.9	3.04	12.6	11.8–12.9	0.48
W. L.	8.10	4.1–12.9	0.91	12.2	10.1–12.9	1.07
Stan. Ach.						
Grade						
Read	11.03	6.6–12.5	2.07	12.42	11.6–12.8	0.45
Arith	11.28	7.8–12.9	1.86	12.67	11.28–12.9	0.60
Sp	7.96	5.1–12.1	1.67	11.27	7.0–12.9	1.81
PPVT-R						
St. Sc.	94.77	78–111	7.31	102.16	93–115	6.01
Raven	St. Sc.	112			116	

Note: Two students below ability cut-off per WAIS-R.

3.3. Achievement test results of the non-LD students

Twenty-two students of the total 55 who requested assessment for suspected LD were found not eligible for LD services because they demonstrated proficient academic skills as well as average or higher cognitive abilities. The scores for this group are also shown in Table 1. On the WJPEB, the average reading grade level score for the non-LD group was 12.87. Twenty (20) of the students in this non-LD group earned maximum scores of 12.9 on the test of reading. Because the highest grade level score on this test is 12.9, it may well be that the reading skills of these students were even higher than the ceiling score. On the written language subtest of the WJPEB, the students obtained a mean grade level score of 12.19, with fourteen of the students scoring 12.9 grade level and only two students scoring below the 12th grade level (i.e. 10th and 11th grade level, respectively). Because arithmetic concerns were not reported by most students, only five of the students were administered the arithmetic section of the WJPEB and the average grade level score was 12.6.

The results of the WJPEB indicate that this group of non-LD students possessed proficient academic skills. In no way could any student's score be construed to indicate an academic deficiency in these areas. These students did not meet the primary and necessary criteria of LD which is academic deficit.

On the Stanford Achievement Test, the mean grade-level scores were 12.42 for reading comprehension, 12.67 for arithmetic, and 11.27 for spelling. This test was used as a screener before the individualized WJPEB tests were given. There is a ceiling of twelfth grade level for these tests. The SAT and WJPEB results were closely aligned for the students with proficient

skills but less so for the students showing deficits skills on the WJPEB.

3.4. Verbal and non-verbal ability test results of the non-LD group

The average PPVT-R standard score was 102 and the average RPMT standard score was 116. The classification for these scores is average and high average, respectively.

3.5. Test results of the general population of students

In an effort to establish an understanding of the skill levels of the students in the general university population, a sample of students enrolled in Introductory Psychology and Developmental English were assessed in the areas of reading, spelling and non-verbal problem solving. None of the students in Introductory Psychology had been referred for or enrolled in Developmental English. Each of the students in Developmental English had been placed in the course based on the evaluation of their writing skills as judged by three instructors of Freshman level English.

Table 2 shows that for the former group, the average spelling grade level score was 11.9 (median, 12.9). The mean RPMT standard score was 112. Reading was evaluated by a tenth grade cloze procedure. Nearly 90% of the student were instructional or independent on the tenth grade cloze reading test. Students in Developmental English showed spelling skills of approximately 8.9 grade level. Their average RPMT standard score was 114. And none showed independent reading on the tenth grade cloze reading test.

Table 2
Assessment results for developmental English and introductory psychology students

Measures	Groups					
	Developmental English (<i>n</i> = 22)			Introductory psychology (<i>n</i> = 23)		
Stanford Ach. Grade Level Spelling	Mean	Range		Mean	Range	
	8.9	3.0–12.8		11.9	5.1–12.9	
	*8 students score 10.0 or above			*20 students score at 10.0 or above		
Ravens						
St. Sc.	102			114		
Reading	Instructional Level			Instructional Level		
10 Grade Cloze	Frust.	Instr.	Indep.	Frust.	Instr.	Indep.
Percentage	60%	40%	0%	13%	26%	60%

3.6. Results summary

The findings indicate that on average the LD group had scores (skills) four grade levels below their non-LD peers on tests of reading and written language. It may well have been that a ceiling effect depressed the scores of the non-LD group making for an even greater differential between the groups. Both groups of students showed normal, that is, average abilities on the tests of receptive vocabulary and non-verbal problem solving. However, the non-LD group showed somewhat higher scores than the LD group on both of the tests. Discrepancies between ability and achievement were found for the LD group but not for the non-LD group.

4. Discussion

This paper describes the processes and outcomes of a program for identifying and documenting college students with LD. The psychometric characteristics of those students compared to non-LD peers are also presented. Early on Mellard and Deshler [12] warned against using non-standardized eligibility criteria and inconsistently applied assessment procedures for identifying LD in the college setting. Many of the same issues are persistent and have been investigated in recent research. The Guckenberger v. Boston University Case [7] powerfully illustrated the contentiousness of many issues related to providing students with learning disabilities accommodations in the university setting. Gregg and Scott [6] reviewed the literature about the procedures and practices for documenting LD in the college setting. They cautioned that the processes for making eligibility decision must be valid, minimally burdensome to the institution and student, based on researched practices, and legally defensible.

4.1. Eligibility standards and practices

The program described here demonstrated that uniform standards for establishing and documenting eligibility for disability accommodations in the college setting can be operationalized in several important ways. Decision rules and cut off scores for establishing disability eligibility were established. The use of eligibility decision rules demystifies the eligibility determination process reducing the subjective nature of and reliance on clinical judgment. The system was standardized and modeled on accepted and researched public school methods for identifying LD as suggested by Mellard and Deshler [12]. For example all students were administered a standardized battery of tests. All eligible students clearly demonstrated deficient academic skills, yet normal cognitive abilities. Data gathered from non-LD groups of students established a bench mark for determining the “typical” skill level of students which is an important indices suggested by Morris and Leuenberger [13]. And, indeed, our group of students with LD demonstrated skill deficits of approximately four years below the comparison group. The academic and cognitive assessment tools that we selected possess adequate validity and could be administered and interpreted by non-doctoral psychologists, a contentious issue in the Guckenberger v. Boston University [7] case.

The assessment and documentation procedures were accepted by the existing student service on campus providing a form of social validity. Thus, once the project ended, the process of eligibility documentation was accomplished by “in-house” professionals rather than relying on assessments and documentation by out-side psychological specialists. By using the expertise of professionals on hand, much was potentially saved in

the way of capital resources which is a major administrative concern.

By adopting these standardized procedures we distanced ourselves from arbitrary and non-defendable practices. In short, a system was developed which could mitigate legal challenges related to verifying and documenting LD in the college setting.

4.2. *Learning characteristics of university students*

This study found that there were, indeed, large differences between the academic skill levels of the students found eligible as LD and non-LD by the criteria developed for that purpose. The students found to be eligible for services in this study showed academic skill level below the high school level and well below their non-LD peers which is not surprising given the a priori cut-off standards. However, the average achievement level of the LD group (eighth to ninth grade) in this project was higher than that commonly found in high school samples of students with LD. For example, Deshler et al. [3] found that high school students with LD, on average, have deficient skills generally at the 5th grade level. Hughes and Smith [9] also reported that college students with LD had higher skills than their non-college peers.

The non-LD students who referred themselves due to their concern about having a learning disability demonstrated proficient skills in reading and written language as well as verbal and nonverbal abilities. A sample of the general population of students also showed similar, proficient skills in reading, spelling, and nonverbal problem solving. Although the data are limited, they tend to indicate that the skills of the students not recommended for developmental English classes were similar to those of the non-LD group. The skills of students in developmental English showed similarities to the LD group in reading and spelling, however, the LD group showed greater cognitive abilities in the nonverbal domain. The PPVT was not administered to these students.

5. Conclusion

From conceptualization to operationalization this project addressed critical concerns about the validity and legality of procedures for documenting and evaluating LD in the university setting which hence have been brought into question in the Boston University case and discussed by several researchers (e.g. [6,14,20]). The

student findings clearly indicate that the academic skill level of the eligible students would make academic success most difficult. Where as all students who were evaluated but not found eligible for disability services showed proficient academic skills and cognitive abilities. Moreover, some of these students were graduate students and had excellent academic records. In retrospect, it would have been informative to have obtained greater information about their reasons for self referral for LD assessment. A note of caution is worth mentioning here. Because of the skill similarities between students with known skill deficits in developmental English classes and the LD sample, it is especially important to consider the full spectrum of reasons for low skills before making disability classification decisions. It is advised that a screener be used before individualized, one-on-one testing is undertaken. This will save time and resources and can clearly indicate whether or not a student has proficient skills counterindicating learning disability. We originally proposed that a cut-off score of 10th grade be used for screening but it appears that a higher score (e.g., 11th grade be used). This will help ensure that false negatives do not occur (i.e., true disabilities are disregarded resulting in eligible students not receiving entitled accommodations). Although we found the Stanford Achievement Test to be adequate for screening, another more current test might be better for this purpose. The same holds true regarding the Raven's Progressive Matrices Test in that a more current test might well supplant its use.

The great challenge for service providers is to provide adequate accommodations or instruction that will assist college students with LD in fulfilling their potential and desires for preparation in the post secondary setting. In this project, learning strategies [4] developed at the University of Kansas, Center for Research on Learning were taught to the students and served as the primary instructional component. Many other instructional or treatment approaches for serving post secondary students with LD have been mentioned in the literature including training in self advocacy skills, the pause procedure, recorded texts or human readers, time management and organizational skills, and stress reduction treatment [1,11,16,21].

In closing, what we have suggested are means for identifying LD in the college setting which conform to current standards in the field as have emerged from litigation as well as our understanding of best practice research. We have also shown that the academic characteristics of LD students in higher education are, indeed, different from "typical" students making success

most difficult. This information continues the call to provide accommodations and instruction to ensure that these students have a fair opportunity to succeed in the university setting.

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